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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/675,044

09/30/2003

Nelson Bolton

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04/19/2007

John Lezdey and Associates
2875 MCI Drive
Pinellas Park, FL 33782

EXAMINER

SPAHN, GAY

ART UNIT

PAPER NUMBER

3635

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/675,044

Applicant(s)

BOLTON ET AL.

Examiner

Gay Ann Spahn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/6/06, 5/22/06 & 9/18/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) 4,7,8 and 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The "Amendment to the Specification" section in the Amendment filed on 22 January 2007 does not comply with the requirements of 37 CFR 1.121(b) because Applicants have not filed a complete "Amendment to the Specification" section in any one amendment. In other words, it is not appropriate for Applicants to respond to a Notice of Non-Compliant Amendment by simply having only a single paragraph with corrections thereto and expect the U.S. Patent and Trademark Office to "cut-and-paste" that fixed paragraph into the "Amendment to the Specification" section in the Amendment filed on 18 September 2006. Rather, Applicants are required to file a complete "Amendment to the Specification" section.

However, in the interest of advancing prosecution, the examiner is:

- (1) vacating both the Notice of Non-Compliant Amendment mailed on 24 November 2006 and the Notice of Non-Compliant Amendment mailed on 09 January 2007;
- (2) not entering the Amendment filed on 05 December 2006 and the Amendment filed on 22 January 2007; and
- (3) entering the Amendment filed on 18 September 2006 in order that the "Amendment to the Specification" section therein replace of the "Amendment to the Specification" section in the Amendment filed on 22 May 2006 (even though the "Amendment to the Specification" section in the Amendment filed on 18 September

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2006 may cause confusion in the printing process were this application to go to issue because in line 2 of the second full paragraph on page 3 of the Amendment, it is barely perceptible that the second occurrence of the digit "4" in the patent number "4,4581,868" has been struck-through to delete the second occurrence of the number "4" in the patent number and insert the digit "5" therefor).

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

(1) reference numerals "41a" and "43b" shown in Fig. 4 (i.e., it is noted that in the amendments to the specification in the Amendment filed on 18 September 2006, the paragraph on page 10, lines 9-21 should be amended again by changing "4a" in line 6 to --41a-- and "outer surface 43a" in line 6 to --inner surface 43b-- in order that reference numerals "41a" and "43b" be mentioned in the specification).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

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CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

(1) page 5 of the Amendment filed on 18 September 2006, lines 7 and 13, it is noted that reference numeral "50" was changed to reference numeral --51--, but this is not acceptable because reference numeral "50" represents the "female mechanical securing element" which is different structure than reference numeral "51" which represents "spaced about circular holes" in the metal flange of the female mechanical securing element (Fig. 4A). Therefore, the examiner suggests that the two occurrences where reference numeral "50" was changed to reference numeral --51-- be changed back and that Applicants correct drawing Fig. 4A by inserting reference numeral "50" with a lead line ending in an arrowhead and pointing toward the entire metal flange "49" with the central hole therein for acceptance of the bolt "45" as it is that structure which represents the female mechanical securing element.

Appropriate correction is required.

Claim Objections

Claims 1 and 5 are objected to because of the following informalities:

(1) claim 1, line 5, the word "distributes" should be changed to --distributing-- for proper grammar;

(2) claim 5, lines 1-2, the recitation of "said fastening mechanism" is vague, indefinite, and confusing as lacking antecedent basis since it is not clear if it is referring back to "a mechanical fastening means" introduced in lines 3-4 of claim 1; and

(3) claim 5, lines 1-2, the recitation that the fastening mechanism consists of "an interacting bolt and nut arrangement" is vague, indefinite, and confusing since Applicants appear to be introducing new structure (i.e., "an interacting nut and bolt arrangement"), but this structure has already been introduced in line 4 of claim 1 as "an interacting male member and female member." Applicant cannot give structure that has already been recited different terminology and then introduce it again. The examiner suggests that claim 5 should be reword to recite that the male member introduced in claim 1 is a bolt and the female member introduced in claim 1 is a nut.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 6, the recitation of "said external polymer element layer" is vague, indefinite, and confusing as lacking antecedent basis since it is not clear if this is referring back to the "at least one external monolithic glazing element layer" introduced in line 2 or the "at least one internal polymer element layer" introduced in lines 2-3.

Claim 1, lines 4-6, the recitation of "said female member applying a pressure on said support structure and distributes the pressure on said external polymer element layer for fixing said unit to the support structure" is vague, indefinite, and confusing because Applicant is claiming a glazing unit per se and not claiming the glazing unit in combination with the support structure.

Further, the support structure has not been positively recited in the claim as having been introduced in an intended use phrase in the preamble of the claim and not having been positively introduced (i.e., no recitation of "a support structure") in the body of the claim so that this recitation is given no patentable weight.

Claim 3, lines 1-2, the recitation that "said male member is embedded in an external ionomer polymer layer" is vague, indefinite, and confusing for lacking antecedent basis since by the use of the word "an" before "external ionomer polymer layer" it appears that Applicants are introducing a new structure not previously recited in claim 1, but the head (18) of the male member (bolt 17) in elected species I of Fig. 1 is embedded in the "at least one internal polymer element layer" (12) which has already been introduced in claim 1.

Claim 3, lines 2-3, the recitation of "the external element layer" is vague, indefinite, and confusing as lacking antecedent basis since it is not clear if this is

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referring back to the "at least one external monolithic glazing element layer" introduced in line 2 of claim 1, the "at least one internal polymer element layer" introduced in lines 2-3 of claim 1, or the "external ionomer polymer layer" introduced in line 2 of claim 2.

Further, the support structure has not been positively recited and therefore is given no patentable weight.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by BOLTON ET AL. (U.S. Patent No. 4,799,346).

As to claim 1 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), BOLTON ET AL. disclose a glazing unit (10; see Figs. 1, 3, 5-7) for mounting in a support structure (unnumbered structure in Fig. 6 that bolt 45 is sunk in) comprising:

at least one external monolithic glazing element layer (12 or 14) bonded to at least one internal polymer element layer (11) having embedded therein at least one member (16 or 22) of a mechanical fastening means having an interacting male member (bolt 45 in Fig. 6) and female member (hole 23 in 22).

The examiner notes that because Applicants are reciting a glazing unit per se and have not positively recited the support structure, the recitation of "said female member applying pressure on said support structure and distributes the pressure on said external polymer element layer for fixing said unit to the support structure" is given no patentable weight.

As to claim 6 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), BOLTON ET AL. disclose the glazing unit of claim 1 as discussed above, and BOLTON ET AL. also disclose a support structure (frame 44; see Figs. 6 and 7) in combination with the glazing unit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over BOLTON ET AL. (U.S. Patent No. 4,799,346) in view of FISCHER ET AL. (U.S. Patent No. 5,106,250).

As to claim 3 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), BOLTON ET AL. disclose the glazing unit of claim 1 as discussed above.

However, BOLTON ET AL. fail to explicitly disclose that said male member is embedded in an external ionomer polymer layer and protrudes through the external element layer and said support structure for connection to the support structure by said female member.

FISCHER ET AL. also discloses that said male member (5) is embedded in a facing panel (1) and protrudes through the facing panel (1) and said support structure (27) for connection to the support structure (27) by said female member (28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the glazing unit of BOLTON ET AL. by making the male member be embedded in one of the layers of the glazing unit as taught by FISCHER ET AL. in order to more securely fasten the glazing unit to the support structure.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over BOLTON ET AL. (U.S. Patent No. 4,799,346) in view of either MCCANN (U.S. Patent No. 4,581,868) or YOXON ET AL. (U.S. Patent No. 4,680,206).

As to claim 5 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), BOLTON ET AL. disclose the glazing unit of claim 1 as discussed above, and BOLTON ET AL. also disclose that said fastening mechanism consists of a bolt (see col. 3, lines 64-66, wherein it states that “[t]he attachment member 16 is further provided with holes 23 for bolting or nailing onto a frame or support structure.”).

However, BOLTON ET AL. fails to explicitly disclose an interacting bolt and nut arrangement.

MCCANN discloses a glazing unit (1) mechanically secured to supporting members (2) via an interacting bolt (12) and nut (21) arrangement.

YOXON ET AL. disclose a glazing unit (1) mechanically secured to supporting members (not shown) via an interacting bolt (8) and nut (30) arrangement.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the glazing unit of BOLTON ET AL. by providing a nut as taught by either MCCANN or YOXON ET AL. to interact with the bolt of BOLTON ET AL. in order to more securely attach the glazing unit to the support structure (i.e., the bolt 45 shown in Fig. 6 of Bolton et al. has a greater chance of becoming detached from where it is sunk in the support structure than if held to the support structure with a nut).

Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over FISCHER ET AL. (U.S. Patent No. 5,106,250) in view of ROWLAND ET AL. (U.S. Patent No. 5,391,411).

As to claim 1 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), FISCHER ET AL. disclose a glazing unit (1 in Fig. 7) for mounting in a support structure (27 in Fig. 7) comprising:

at least one glazing element layer (1) having embedded therein at least one member (5) of a mechanical fastening means having an interacting male member (bolt 5) and female member (nut 28), said female member (28) applying pressure on said

support structure (28) and distributes the pressure on said glazing element layer (1) for fixing said unit (1) to the support structure (27).

However, FISCHER ET AL. fail to explicitly disclose that the glazing unit is comprised of at least one external monolithic glazing element layer bonded to at least one internal polymer element layer, wherein at least one of the male member and the female member is embedded in the at least one internal polymer element layer.

ROWLAND ET AL. discloses a glazing unit (Fig. 4) comprised of at least one external monolithic glazing element layer (glass sheet 11) bonded to at least one internal polymer element layer (layer of cured resin 17), wherein a male member (13) is embedded in the at least one internal polymer element layer (17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the glazing unit of FISCHER ET AL. by making the facing panel (1) of FISCHER ET AL. be an outer layer of glass bonded to an inner layer of plastic and having the head of a male member be embedded in the inner plastic layer as taught by ROWLAND ET AL. in order to for the embedded head of the male fastener to be protected by the outer glass layer and yet easy to embed in the moldable plastic inner layer for secure fastening of the glazing unit to the support structure.

As to claim 3 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), FISCHER ET AL. in view of ROWLAND ET AL. disclose the glazing unit of claim 1 as discussed above, and the resulting glazing unit from the combination of FISCHER ET AL. in view of ROWLAND ET AL. also discloses that said male member (bolt 5 of FISCHER ET AL.) is embedded in an

internal ionomer polymer layer (17 of ROWLAND ET AL.) and protrudes through the internal ionomer polymer layer and said support structure (27 of FISCHER ET AL.) for connection to the support structure (27 of FISCHER ET AL.) by said female member (28 of FISCHER ET AL.).

As to claim 5 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), FISCHER ET AL. in view of ROWLAND ET AL. disclose the glazing unit of claim 1 as discussed above, and the resulting glazing unit from the combination of FISCHER ET AL. in view of ROWLAND ET AL. also discloses that said fastening mechanism consists of an interacting bolt (5 of FISCHER ET AL.) and nut (28 of FISCHER ET AL.) arrangement.

As to claim 6 (and as best understood despite the 35 U.S.C. § 112, second paragraph, indefiniteness discussed above), FISCHER ET AL. in view of ROWLAND ET AL. disclose the glazing unit of claim 1 as discussed above, and the resulting glazing unit from the combination of FISCHER ET AL. in view of ROWLAND ET AL. also discloses a support structure (27 of FISCHER ET AL.) in combination with the glazing unit.

Response to Arguments

Applicant's arguments filed 06 March 2006 have been fully considered but they are not persuasive.

On page 9, line 1-6, Applicant argues that:

Bolton, et al requires resinous interlayers in which the attachment member is mounted in the resinous layers. The attachment means is

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primarily a tab in T-form and preferably provided with resistance means. The use of tabs is to prevent delamination and as a glazing unit for windows. Male and female fastening members are not used or embedded as provided by the present invention. The bolts in the reference are to attach comers of the units to a frame. The bolts are not embedded in a polymer.

The examiner disagrees that BOLTON ET AL. does not disclose male and female members embedded so as to meet the recitation of claim 1. In Fig. 6, BOLTON ET AL. disclose female members (tabs 22 each having hole 23 through which a bolt 45 passes and thus, clearly making them female members) embedded in interlayer 11. In the Summary of the Invention section, at col. 2, lines 46-47, BOLTON ET AL. states that the invention concerns a laminate having an inner layer of an ionomer resin and this clearly meets the definition of "polymer."

Applicant also argues that:

McCann and Yoxon, et al adds nothing to the teaching of Bolton, et al which would lead to the present invention. The combination of references would only lead to bolts used as fasteners at the corner of the glazing unit.

In contrast, applicants have a bolt embedded within an ionomer which is not found at all four comers. There is further the internal polymer layer adjacent to the support structure that distributes the pressure when the female member is tightened. This important feature is not disclosed in the prior art.

The fastening of the bolts in the secondary references does not result in the distribution of pressure as presently claimed.

The examiner disagrees with Applicant's argument that MCCANN and YOXON ET AL. add nothing to the teaching of BOLTON ET AL., MCCANN, and YOXON ET AL. both teach the use of interacting bolts and nuts in glass assemblies or glazing units.

Further, Applicant's argument that the "fastening of the bolts in the secondary references does not result in the distribution of pressure as presently claimed" is made

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moot by the fact that Applicant's are claiming a glazing unit per se and not the combination of the glazing unit and support structure. Indeed, the support structure has not positively recited so that the recitation of "said female member applying pressure on said support structure and distributes the pressure on said external polymer element layer for fixing said unit to the support structure" is given no patentable weight.

Therefore, the rejection of claims 1 and 6 under 35 U.S.C. § 102(b) as being anticipated by BOLTON ET AL. and the rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over BOLTON ET AL. in view of either MCCANN or YOXON ET AL. are being maintained

However, in view of Applicant's amendments directly to claims 1 and 3 and indirectly to claims 5 and 6, the examiner is also added new grounds of rejection based upon 35 U.S.C. § 103(a) as being unpatentable over FISCHER ET AL. in view of ROWLAND ET AL.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gay Ann Spahn whose telephone number is (571)-272-7731. The examiner can normally be reached on Monday through Friday, 10:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl D. Friedman can be reached on (571)-272-6842. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

^{GAS}
Gay Ann Spahn, Patent Examiner
April 15, 2007



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